

**ecology and environment, inc.**

International Specialists in the Environment

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Seattle, Washington 98104Tel: (206) 624-9537, Fax: (206) 621-9832 **MEMORANDUM**

DATE: March 21, 1995

TO: Jeryl Kolb, Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, TAT-Chemist, E & E, Seattle, WA *MW*

THRU: David Byers, TAT-Chemist, E & E, Seattle, WA *DB*

SUBJ: Organic Data Quality Assurance Review, Ridgefield Site,
Ridgefield, Washington

REF: Project TDD: T10-9410-028 Analytical TDD: T10-9412-004
Project PAN: EWA-0797-SB Analytical PAN: EWA-0797-AA

The data quality assurance review of 5 water and 2 soil samples collected from the Ridgefield site in Ridgefield, Washington, has been completed. Analysis for Chlorinated Pesticides/Polychlorinated Biphenyls (EPA Method 8080) was performed by the Sound Analytical Services, Tacoma, Washington.

The samples were numbered:

Water	T4120210	T4120211	T4120212	T4120221	T4120217
Soil	T4120201	T4120207			

Data Qualifications:**I Sample Holding Time: Acceptable.**

The samples were collected 12-12-94(soil) or 12-13-94(water), extracted 12-20-94, and analyzed by 12-21-94, therefore within holding time limits of less than 7 days (14 days for soils) between collection and extraction and less than 40 days between extraction and analysis.

II Instrument Performance: Acceptable.

The 4,4'-DDT retention time was greater than 12 minutes on all columns. Peak resolution and the analytical sequence were acceptable. All pesticide standards were within the listed retention time windows. 4,4'-DDT and endrin percent breakdown results were within QC limits. The surrogate retention time shift was within QC limits.

III Initial and Continuing Calibration Verification: Acceptable.

A seven-point initial calibration was performed for aldrin, endrin, DBC, and 4,4'-DDT, with all % Relative Standard Deviations (%RSDs) less than the QC limit of 10 % on both columns. The proper analytical sequence was followed.



IV Error Determination: Not Performed.

A. Determination of Bias: Not Performed.

Samples necessary for bias determination were not provided to the laboratory. All sample results were flagged RND (Recovery Not Determined).

B. Determination of Precision: Not Performed.

Samples necessary for precision determination were not provided to the laboratory. All sample results were flagged PND (Precision Not Determined).

V Method Blank: Acceptable.

No contaminants were detected in any method blank.

VI Compound Identification: Acceptable.

Compound identification was acceptable.

VII Compound Quantitation and Reported Detection Limits: Acceptable.

Compound quantitation and reported detection limits were acceptable.

VIII Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

IX Surrogate Recoveries: Acceptable.

All surrogate recoveries were within QC limits of 50 % to 150 % recovery.

X Overall Assessment of Data for Use

GPC cleanup and Florisil cleanup checks were not performed. No action was taken based on these discrepancies. The overall usefulness of the data is based on the criteria outlined in the OSWER Directive "National Functional Guidelines For Organic Data Review" (February 1994). Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J - The associated numerical value is an estimated quantity because the reported concentrations were less than the contract required detection limits or quality control criteria were not met.
- U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120210
Lab ID:	45227-01
Date Received:	12/16/94
Date Prepared:	12/20/94
Date Analyzed:	12/21/94
% Solids	

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
TCMX	66		50	150
Decachlorobiphenyl	80		50	150

Analyte	Result (ug/L)	PQL	Flags
Aroclor 1016	ND	0.52	
Aroclor 1221	ND	0.52	
Aroclor 1232	ND	0.52	
Aroclor 1242	ND	0.52	
Aroclor 1248	ND	0.52	
Aroclor 1254	ND	0.52	
Aroclor 1260	ND	0.52	
Aldrin	ND	0.01	
alpha-BHC	ND	0.01	
beta-BHC	ND	0.01	
delta-BHC	ND	0.01	
gamma-BHC (Lindane)	ND	0.01	
Chlordane (technical)	ND	0.1	
4,4'-DDD	ND	0.021	
4,4'-DDE	ND	0.021	
4,4'-DDT	ND	0.021	
Dieldrin	ND	0.021	
Endosulfan I	ND	0.01	
Endosulfan II	ND	0.021	
Endosulfan sulfate	ND	0.021	
Endrin	ND	0.021	
Endrin aldehyde	ND	0.021	
Heptachlor	ND	0.01	
Heptachlor epoxide	ND	0.01	
Methoxychlor	ND	0.1	
Endrin ketone	ND	0.021	

Handwritten notes: PND RND, MW 32-05

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Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45227-01 continued...

Analyte	Result (ug/L)	PQL	Flags
Toxaphene	ND	1 U	PND RND

MW 3-24-95

SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120211
Lab ID:	45227-02
Date Received:	12/16/94
Date Prepared:	12/20/94
Date Analyzed:	12/21/94
% Solids	

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
TCMX	70		50	150
Decachlorobiphenyl	78		50	150

Analyte	Result (ug/L)	PQL	Flags
Aroclor 1016	ND	0.52	
Aroclor 1221	ND	0.52	
Aroclor 1232	ND	0.52	
Aroclor 1242	ND	0.52	
Aroclor 1248	ND	0.52	
Aroclor 1254	ND	0.52	
Aroclor 1260	ND	0.52	
Aldrin	ND	0.01	
alpha-BHC	ND	0.01	
beta-BHC	ND	0.01	
delta-BHC	ND	0.01	
gamma-BHC (Lindane)	ND	0.01	
Chlordane (technical)	ND	0.1	
4,4'-DDD	ND	0.021	
4,4'-DDE	ND	0.021	
4,4'-DDT	ND	0.021	
Dieldrin	ND	0.021	
Endosulfan I	ND	0.01	
Endosulfan II	ND	0.021	
Endosulfan sulfate	ND	0.021	
Endrin	ND	0.021	
Endrin aldehyde	ND	0.021	
Heptachlor	ND	0.01	
Heptachlor epoxide	ND	0.01	
Methoxychlor	ND	0.1	
Endrin ketone	ND	0.021	

PND RND
 M W 3 2 4 95

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Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45227-02 continued...

Analyte	Result (ug/L)	PQL	Flags
Toxaphene	ND	1 U	NO RAP

MM 24-05

SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120212
Lab ID:	45227-03
Date Received:	12/16/94
Date Prepared:	12/20/94
Date Analyzed:	12/21/94
% Solids	

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
TCMX	66		50	150
Decachlorobiphenyl	77		50	150

Analyte	Result (ug/L)	PQL	Flags
Aroclor 1016	ND	0.52	✓
Aroclor 1221	ND	0.52	✓
Aroclor 1232	ND	0.52	✓
Aroclor 1242	ND	0.52	✓
Aroclor 1248	ND	0.52	✓
Aroclor 1254	ND	0.52	✓
Aroclor 1260	ND	0.52	✓
Aldrin	ND	0.01	✓
alpha-BHC	ND	0.01	✓
beta-BHC	ND	0.01	✓
delta-BHC	ND	0.01	✓
gamma-BHC (Lindane)	ND	0.01	✓
Chlordane (technical)	ND	0.1	✓
4,4'-DDD	ND	0.021	✓
4,4'-DDE	ND	0.021	✓
4,4'-DDT	ND	0.021	✓
Dieldrin	ND	0.021	✓
Endosulfan I	ND	0.01	✓
Endosulfan II	ND	0.021	✓
Endosulfan sulfate	ND	0.021	✓
Endrin	ND	0.021	✓
Endrin aldehyde	ND	0.021	✓
Heptachlor	ND	0.01	✓
Heptachlor epoxide	ND	0.01	✓
Methoxychlor	ND	0.1	✓
Endrin ketone	ND	0.021	✓

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Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45227-03 continued...

Analyte	Result (ug/L)	PQL	Flags
Toxaphene	ND	1 U	END END

MW 3245
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SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120221
Lab ID:	45227-04
Date Received:	12/16/94
Date Prepared:	12/20/94
Date Analyzed:	12/21/94
% Solids	

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
TCMX	66		50	150
Decachlorobiphenyl	58		50	150

Analyte	Result (ug/L)	PQL	Flags
Aroclor 1016	ND	0.56	PND RND
Aroclor 1221	ND	0.56	
Aroclor 1232	ND	0.56	
Aroclor 1242	ND	0.56	
Aroclor 1248	ND	0.56	
Aroclor 1254	ND	0.56	
Aroclor 1260	ND	0.56	
Aldrin	ND	0.011	
alpha-BHC	ND	0.011	
beta-BHC	ND	0.011	
delta-BHC	ND	0.011	
gamma-BHC (Lindane)	ND	0.011	
Chlordane (technical)	ND	0.11	
4,4'-DDD	ND	0.022	
4,4'-DDE	ND	0.022	
4,4'-DDT	ND	0.022	
Dieldrin	ND	0.022	
Endosulfan I	ND	0.011	
Endosulfan II	ND	0.022	M 3895
Endosulfan sulfate	ND	0.022	
Endrin	ND	0.022	
Endrin aldehyde	ND	0.022	
Heptachlor	ND	0.011	
Heptachlor epoxide	ND	0.011	
Methoxychlor	ND	0.11	
Endrin ketone	ND	0.022	

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Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45227-04 continued...

Analyte	Result (ug/L)	PQL	Flags
Toxaphene	ND	1.1 ✓	PND RND

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SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120217
Lab ID:	45227-05
Date Received:	12/16/94
Date Prepared:	12/20/94
Date Analyzed:	12/21/94
% Solids	

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
TCMX	82		50	150
Decachlorobiphenyl	84		50	150

Analyte	Result (ug/L)	PQL	Flags
Aroclor 1016	ND	0.81	
Aroclor 1221	ND	0.81	
Aroclor 1232	ND	0.81	
Aroclor 1242	ND	0.81	
Aroclor 1248	ND	0.81	
Aroclor 1254	ND	0.81	
Aroclor 1260	ND	0.81	
Aldrin	ND	0.016	
alpha-BHC	ND	0.016	
beta-BHC	ND	0.016	
delta-BHC	ND	0.016	
gamma-BHC (Lindane)	ND	0.016	
Chlordane (technical)	ND	0.16	
4,4'-DDD	ND	0.032	
4,4'-DDE	ND	0.032	
4,4'-DDT	ND	0.032	
Dieldrin	ND	0.032	
Endosulfan I	ND	0.016	
Endosulfan II	ND	0.032	
Endosulfan sulfate	ND	0.032	
Endrin	ND	0.032	
Endrin aldehyde	ND	0.032	
Heptachlor	ND	0.016	
Heptachlor epoxide	ND	0.016	
Methoxychlor	ND	0.16	
Endrin ketone	ND	0.032	

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Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45227-05 continued...

Analyte	Result (ug/L)	PQL	Flags
Toxaphene	ND	1.6 U	PND RND

Mr 3-495

SOUND ANALYTICAL SERVICES, INC.

Client Name	Ecology & Environment
Client ID:	T4120201
Lab ID:	45227-07
Date Received:	12/16/94
Date Prepared:	12/19/94
Date Analyzed:	12/20/94
% Solids	68.05

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
TCMX	69		50	150
Decachlorobiphenyl	97		50	150

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	Flags
Aroclor 1016	ND	70	
Aroclor 1221	ND	70	
Aroclor 1232	ND	70	
Aroclor 1242	ND	70	
Aroclor 1248	ND	70	
Aroclor 1254	ND	70	
Aroclor 1260	ND	70	
Aldrin	ND	1.4	
alpha-BHC	ND	1.4	
beta-BHC	ND	1.4	
delta-BHC	ND	1.4	
gamma-BHC (Lindane)	ND	1.4	
Chlordane (technical)	ND	14	
4,4'-DDD	ND	2.8	
4,4'-DDE	ND	2.8	
4,4'-DDT	ND	2.8	
Dieldrin	ND	2.8	
Endosulfan I	0.76 J	1.4	J
Endosulfan II	ND	2.8	
Endosulfan sulfate	0.94 J	2.8	J
Endrin	ND	2.8	
Endrin aldehyde	ND	2.8	
Heptachlor	ND	1.4	
Heptachlor epoxide	ND	1.4	
Methoxychlor	ND	14	
Endrin ketone	ND	2.8	

Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45227-07 continued...

Analyte	Result (ug/kg)	PQL	Flags
Toxaphene	ND	140 U	IND RHP

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SOUND ANALYTICAL SERVICES, INC.

Client Name

Ecology & Environment

Client ID:

T4120207

Lab ID:

45227-08

Date Received:

12/16/94

Date Prepared:

12/19/94

Date Analyzed:

12/20/94

% Solids

63.32

Organochlorine Pesticides and PCBs by USEPA Method 8080

Surrogate	% Recovery	Flags	Recovery Limits	
			Low	High
TCMX	68		50	150
Decachlorobiphenyl	84		50	150

Sample results are on a dry weight basis.

Analyte	Result (ug/kg)	PQL	Flags
Aroclor 1016	ND	78	✓
Aroclor 1221	ND	78	✓
Aroclor 1232	ND	78	✓
Aroclor 1242	ND	78	✓
Aroclor 1248	ND	78	✓
Aroclor 1254	ND	78	✓
Aroclor 1260	ND	78	✓
Aldrin	ND	1.6	✓
alpha-BHC	ND	1.6	✓
beta-BHC	ND	1.6	✓
delta-BHC	ND	1.6	✓
gamma-BHC (Lindane)	ND	1.6	✓
Chlordane (technical)	ND	16	✓
4,4'-DDD	ND	3.1	✓
4,4'-DDE	ND	3.1	✓
4,4'-DDT	2.6	3.1	✓
Dieldrin	ND	3.1	✓
Endosulfan I	ND	1.6	✓
Endosulfan II	1.3	3.1	✓
Endosulfan sulfate	ND	3.1	✓
Endrin	ND	3.1	✓
Endrin aldehyde	ND	3.1	✓
Heptachlor	ND	1.6	✓
Heptachlor epoxide	ND	1.6	✓
Methoxychlor	3.3	16	✓
Endrin ketone	ND	3.1	✓

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Organochlorine Pesticides and PCBs by USEPA Method 8080 data for 45227-08 continued...

Analyte	Result (ug/kg)	PQL	Flags
Toxaphene	ND	160 U	fnd RND

MV32-05